

PERMIT APPLICATION REVIEW
TEMPORARY COVERED SOURCE PERMIT NO. 0726-01-CT
Applications for a Significant Modification Nos. 0726-03 and
Application for Renewal No. 0726-04

Company: Road and Highway Builders, LLC

Mailing Address: 500 Nevada Boulevard
 Lovelock, Nevada 89419

Facility: 400 TPH Portable Drum Mix Asphalt Plant

Location: Various Temporary Sites, State of Hawaii

Initial Location: UTM: Zone 4, 595,079 m E, 2,355,688 m N (NAD 83)
 Kitty Hawk Road, Kapolei, Oahu

SIC Code: 2951 (Asphalt Paving Mixtures and Blocks)

Responsible Official: Mr. John Portman
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Equipment:

Equipment	Manufacturer	Model No.	Serial No.	Manuf. Date
400 TPH drum mixer/dryer	Boeing	MS-400-MK	533	
Baghouse	Caterpillar	APM 810	APM810-110	
2.115 MMBtu/hr hot oil heater	CEI	CEI-1800	C07 006	
350 TPH scalping screen	Kolberg	1D488	1527-48-8-79	
1467 bhp diesel engine generator (Nonroad Engine)	Caterpillar	3508	4GM00362	1998
65 bhp diesel engine (insignificant)	Isuzu	BB-4JG1T		<2005
(2) Portable asphalt storage tanks	CEI			
50 TPH RAP crusher	Cedarapids	30		
325 hp diesel engine (Nonroad Engine)	Caterpillar	3406	90U02410	
50 hp diesel engine generator (insignificant)	MQ	DCA70SSJ	734472	
Various conveyors				

BACKGROUND

Road and Highway Builders, LLC has submitted an application for significant modification to allow the option of burning specification oil and LPG in the drum mixer/dryer.

APPLICABLE REQUIREMENTS

Hawaii Administrative Rules (HAR)

Title 11 Chapter 59, Ambient Air Quality Standards

Title 11 Chapter 60.1, Air Pollution Control

Subchapter 1, General Requirements

Subchapter 2, General Prohibitions

11-60.1-31, Applicability

11-60.1-32, Visible Emissions

11-60.1-33, Fugitive Dust

11-60.1-37, Process industries

11-60.1-38, Sulfur Oxides from Fuel Combustion

Subchapter 5, Covered Sources

Subchapter 6, Fees for Covered Sources, Noncovered Sources, and Agricultural Burning

11-60.1-111, Definitions

11-60.1-112, General Fee Provisions for Covered sources

11-60.1-113, Application Fees for Covered sources

11-60.1-114, Annual Fees for Covered sources

11-60.1-115, Basis of Annual Fees for Covered Sources

Subchapter 8, Standards of Performance for Stationary Sources

11-60.1-161, New Source Performance Standards

Subchapter 9, Hazardous Air Pollutant Sources

Subchapter 10, Field Citations

Standard of Performance for New Stationary Sources (NSPS), 40 Code of Federal Regulations (CFR) Part 60

Subpart I - Standards of Performance for Hot Mix Asphalt Facilities **is applicable** to the 400 TPH portable drum mix asphalt plant because the facility commenced construction or modification after June 11, 1973.

Standard of Performance for New Stationary Sources (NSPS), 40 CFR Part 60

Subpart OOO - Standards of Performance for Nonmetallic Mineral Processing Plants **is not applicable** to the portable RAP crusher because the maximum capacity of the crusher is less than 150 tons/hour.

Standard of Performance for New Stationary Sources (NSPS), 40 CFR Part 60

Subpart IIII – Standards of Performance for Stationary Compression Ignition Internal Combustion Engines **is not applicable** to the 1,467 bhp diesel engine generator and 325 hp diesel engine, because the engines will be operated as nonroad engines. Subpart IIII applies to stationary internal combustion engines that are not nonroad engines.

National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 61

This source **is not subject** to NESHAP as there are no standards in 40 CFR Part 61 applicable to this facility.

National Emission Standards for Hazardous Air Pollutants for Source Categories (NESHAP) (Maximum Achievable Control Technology (MACT)), 40 CFR Part 63

Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines (RICE) **is not applicable** to the 1,467 bhp diesel engine generator and 325 hp diesel engine because the engines will be operated as nonroad engines. Subpart ZZZZ applies to stationary internal combustion engines that are not nonroad engines.

Prevention of Significant Deterioration (PSD), 40 CFR Part 52, §52.21

This source **is not subject** to PSD requirements because it is not a major stationary source as defined in 40 CFR §52.21 and HAR Title 11, Chapter 60.1, Subchapter 7.

Compliance Assurance Monitoring (CAM), 40 CFR 64

This source **is not subject** to CAM because the facility is not a major source. The purpose of CAM is to provide a reasonable assurance that compliance is being achieved with large emissions units that rely on air pollution control device equipment to meet an emissions limit or standard. Pursuant to 40 CFR Part 64, for CAM to be applicable, the emissions unit must: (1) be located at a major source; (2) be subject to an emissions limit or standard; (3) use a control device to achieve compliance; (4) have potential pre-control emissions that are 100% of the major source level; and (5) not otherwise be exempt from CAM.

Air Emissions Reporting Rule (AERR), 40 CFR Part 51, Subpart A

AERR **is not applicable** because emissions from the facility do not exceed AERR thresholds.

DOH In-house Annual Emissions Reporting

The Clean Air Branch requests annual emissions reporting from those facilities that have facility wide emissions exceeding in-house reporting levels and for all covered sources. Annual emissions reporting **will be required** because this facility is a covered source.

Best Available Control Technology (BACT)

This source **is not subject** to BACT analysis because potential emissions of the proposed addition of specification oil and LPG are at or below previous emission rates. BACT analysis is required for new sources or modifications to sources that have the potential to emit or increase emissions above significant levels considering any limitations as defined in HAR §11-60.1-1.

Greenhouse Gas (GHG) Tailoring Rule

Title V permitting for GHG emissions **is not applicable** because the potential to emit of CO₂ equivalent (CO₂e) emissions are less than 100,000 tons per year. Total GHG emissions on a CO₂e basis using the global warming potential (GWP) of the GHG are shown in the table below.

GHG	GWP	GHG Mass-Based Emissions (TPY)	CO ₂ e Based Emissions (TPY)
Carbon Dioxide (CO ₂)	1	15021.6	15022
Methane (CH ₄)	25	4.32	108
Nitrous Oxide (N ₂ O)	298	0.02	6.0
Total Emissions:			15136

Synthetic Minor Source

A synthetic minor source is a facility that is potentially major, as defined in HAR §11-60.1-1, but is made non-major through federally enforceable permit conditions. This facility **is a synthetic minor** source because potential CO, NO_x, and PM emissions exceed major source thresholds when the facility is operated without limitations for 8,760 hours/year.

INSIGNIFICANT ACTIVITIES / EXEMPTIONS

Diesel Engines

The following diesel engine generators are considered insignificant in accordance with HAR §11-60.1-82(f)(2) because their heat input capacities are less than one (1) MMBtu/hr.

1. 65 hp generator: $2.6 \text{ gal/hr} \times 0.14 \text{ MMBtu/gal} = 0.36 \text{ MMBtu/hr}$.
2. 50 hp generator (powering RAP conveyors): $86 \text{ hp} \times 7,000 \text{ Btu/hp-hr} = 0.60 \text{ MMBtu/hr}$.

Storage Tanks

The following storage tanks are less than 40,000 gallons and are considered insignificant activities in accordance with HAR §11-60.1-82(f)(1):

1. 10,000 gallon fuel oil no. 2 storage tank.
2. Two (2) 30,000 gallon CEI portable asphalt cement tanks.

Potential emissions from the permitted and insignificant equipment are below major source levels.

ALTERNATIVE OPERATING SCENARIOS

Diesel Engine and Diesel Engine Generator

The permittee may replace each diesel engine or diesel engine generator with a temporary replacement unit of similar size with equal or lesser emissions if any repair reasonably warrants the removal of the diesel engine or diesel engine generator from its site (i.e., equipment failure, engine overhaul, or any major equipment problems requiring maintenance for efficient operation).

AIR POLLUTION CONTROLS

Baghouse

The drum mixer/dryer is equipped with a baghouse to control PM emissions

PROJECT EMISSIONS

400 TPH Drum Mixer/Dryer

Emissions were based on the maximum capacity of the drum mixer/dryer, which is equipped with a baghouse to control PM emissions. The drum mixer/dryer will be fired on fuel oil No. 2, specification oil, LPG with a maximum sulfur content of 0.5% by weight. Largest emission factors were used from AP-42 Section 11.1 (3/04) - Hot Mix Asphalt Plants, 11.4 (7/08) - Liquefied Petroleum Gas Combustion, or 11.11 (10/96) - Waste Oil Combustion

400 TPH Drum Mixer/Dryer					
Pollutant	Emissions (lb/hr)			Emissions (TPY) [1,750 hr/yr]	Emissions (TPY) [8,760 hr/yr]
	No. 2	LPG	Waste		
CO	52.00	9.80	52.00	45.50	227.76
NO _x	22.00	16.90	22.00	19.25	96.36
SO ₂	4.40	0.002	4.40	3.85	19.27
PM	0.92	0.91	0.92 ^a	0.81	4.03
PM-10	0.92	0.91	0.92 ^a	0.81	4.03
PM-2.5	0.92	0.91	0.92 ^a	0.81	4.03
VOC	12.80	1.30	12.80	11.20	56.06
HAPs	3.52	-	4.00	3.5	17.52
HCL ^b	-	-	0.084	0.07	0.37

^a AP-42 Table 11.1-3 "The data indicate that fuel type does not significantly affect PM emissions."

^b HCL added to pollutants

Total Emissions

Total facility emissions are summarized in the table below.

Total Facility Emissions and Trigger Levels (TPY)					
Pollutant	Emissions (With Limits)	Emissions (No Limits)	BACT Significant Level	AERR Threshold	DOH Level
CO	51.2	249.1	100	1000	250
NO _x	49.9	215.4	40	100	25
SO ₂	14.6	51.3	40	100	25
PM	36.3	172.1	25	-	25
PM-10	15.0	69.8	15	100	25
PM-2.5	5.1	22.5	-	100	-
VOC	18.7	91.0	40	100	25
HAPs	3.62	18.1	-	-	5

AIR QUALITY ASSESSMENT

There were no changes in machinery or an increase in emissions to require a new Air Quality Assessment for this permit renewal.

SIGNIFICANT PERMIT CONDITIONS

1. Operating Hour Limits

- a. The total operating hours of the drum mixer/dryer shall not exceed 1,750 hours in any rolling twelve-month (12-month) period.
- b. The total operating hours of the 1,467 bhp diesel engine generator shall not exceed 1,750 hours in any rolling twelve-month (12-month) period.
- c. The total operating hours of the 325 hp diesel engine shall not exceed 3,000 hours in any rolling twelve-month (12-month) period.

Reason: Limit CO, NO_x, and PM emissions below the major source thresholds.

2. Fuel Specifications

- a. The drum mixer/dryer shall be fired only on the following fuels with a maximum sulfur content not to exceed 0.5% by weight:
 - i. Fuel oil no. 2;
 - ii. Specification used oil with limits specified in Special Condition No. C.3.f;
 - iii. Liquid petroleum gas (LPG); or
 - iv. Any combination thereof.
- b. The diesel engine, diesel engine generator, and hot oil heater shall be fired only fuel oil no. 2 with a maximum sulfur content not to exceed 0.5% by weight.

Reason: Change of fuels proposed by the applicant for the drum mixer/dryer.

3. Baghouse

- a. The baghouse servicing the drum mixer/dryer shall be operated at all times during operation of the drum mixer/dryer. The permittee shall not operate the drum mixer/dryer if a problem affecting baghouse control efficiency is observed at any time. The permittee shall investigate and correct the problem before resuming drum mixer/dryer operation.
- b. The baghouse pressure differential shall be maintained within the range of two (2) to six (6) inches of water.
- c. The permittee shall follow a regular maintenance schedule as recommended by the manufacturer to ensure the following items of the baghouse are operating properly:
 - i. The filter bags are checked for any tears, holes, abrasions and scuffs, and are replaced as needed;
 - ii. The cleaning system is maintained and operated, as needed, to minimize particulate buildup or caking on the filter bags;
 - iii. The hopper is discharged in a timely manner to prevent excessive particulate buildup which could cause compaction, overflow, or plugging; and
 - iv. Other miscellaneous items/equipment essential for effective baghouse operation are maintained.

Reason: Ensure baghouse is properly operated and maintained

PROPOSED

4. Incorporate 40 CFR Part 60, Subpart I, provisions for the drum mix asphalt plant.

The permittee shall not discharge or cause the discharge into the atmosphere from the baghouse servicing the drum mixer/dryer, particulate matter in excess of 90 mg/dscm (0.04 gr/dscf).

Reason: The drum mix asphalt plant is subject to 40 CFR Part 60, Subpart I.

CONCLUSION

Road and Highway Builders, LLC, has submitted an application for a permit renewal and significant modification to allow the burning of specification oil and LPG in the drum mixer/dryer. There are no other proposed changes in this permit renewal and modification. The ambient air quality impact assessment of the facility demonstrates compliance with State and National Ambient Air Quality Standards. Recommend issuance of the covered source permit subject to the incorporation of the significant permit conditions, 30-day public comment period, and 45-day Environmental Protection Agency review period.

Joseph Baumgartner
May 13, 2014